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METHODOLOGICAL CONSIDERATIONS IN COST OF ILLNESS STUDIES ON ALZHEIMER DISEASE

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OBJECTIVES: Cost of illness (COI) studies can identify and measure all the costs of a particular disease, including the direct, indirect and intangible dimension. They provide estimates about the economic impact of costly disease. Alzheimer disease (AD) is a relevant example to review cost of illness studies because of its costliness. The aim of this study was to review relevant published cost studies of AD to analyze the method used and to identify which dimension had to be improve from a methodological perspective. **METHODS:** We described the key points of cost study methodology. Cost studies on AD were systematically reviewed. The methodological choices of the studies that estimating AD costs were analyzed using an analytical grid which contains the main methodological items of COI studies. **RESULTS:** Seventeen articles were retained. Depending on studies, annual total cost of AD per patient varies from $2,935 to $52,954.Disease definition was made mainly with NINCDS-ADRDA criterion and with MMSE for severity stage. The societal perspective was the mainly used perspective and both direct costs and informal costs were assessed in 14 studies. A Prospective record was realized in 13 studies with a bottom-up approach. Resource consumption was mainly estimate with questionnaires. Valuation of unit costs was mostly made with national estimates, reimbursement tariffs and gross wage of a close substitute. Most studies present results clearly and consistently set out in relation to the methods adopted. Nevertheless, methods, data sources, and estimated cost categories in each study varied widely. The review showed that cost studies adopted significantly different approaches to estimate costs of AD, reflecting a lack of consensus on the methodology of cost studies. **CONCLUSIONS:** Commenting on these quantitative results is problematic because of the different approaches adopted to assess AD costs. To increase its credibility, closer agreement among researchers on the methodological principles of cost studies would be desirable.

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BURDEN OF SPINA BIFIDA (SB) IN GERMANY - THE CHARACTERISTICS OF SB POPULATION

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OBJECTIVES: To assess characteristics of a population with SB, treated in a tertiary reference center. **METHODS:** Participants were recruited from the tertiary clinic database or when initiating care in the clinic. Participants had to have a verifiable SB diagnosis, and a cognitive ability to respond to the questionnaire or a caregiver able to answer questions. Data were double-entered with queries issued to patients to improve data quality. Descriptive analyses were used to summarize data. **RESULTS:** Of 88 participants, 49 were male (44%), 38 female (56%), mean (±SD) age was 28.7±13.5 years (range: 3-68 years). In 15 participants (17%) the lesion was located in the sacral region/occult, in 55 lumbar (63%), and in 18 (20%) at thoracic/cervical level. The majority had myelomeningocele (n=62), 19 had meningocele, 2 had lipomenigocele and 5 had occult lesion; 59 (67%) had a hydrocephalus, 58 of those were shunted. Of 88, 63% always used a wheelchair, 26% answered they used it often, whereas 11% never used wheelchairs. 20 participants needed splints on feet/legs, 10 were able to walk using a walking aid. Those with hydrocephalus needed a wheelchair at younger age, compared to those without hydrocephalus (5.7 vs. 15.3 years). Of 71 adults, more than 50% had BMI >25 (overweight), in 20% BMI was >30 (obese). The most frequent comorbidities were abnormal bladder function/incontinence (90.9%), paralysis (73.9%), hydrocephalus (67.1%), orthopedic problems (56.8%) and loss of ambulation (51.1%). Less than 50% reported Arnold Chiari malformation (47.7%), gastrointestinal/bowel disorders (46.6%), skin integrity/pressure sores (37.5%), latex allergic reaction (36.4%), and eye problems (31.8%). Among all participants, 54 lived with their parents, 13 with a partner, and 11 alone. **CONCLUSIONS:** Results indicate that SB may have substantial impact on general health, with large number of comorbidities that require lifelong treatment. Such treatment contributes to the overall burden associated with SB.

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TREATMENT PATTERNS AND RESOURCE CONSUMPTION IN PATIENTS WITH MULTIPLE SCLEROSIS (MS)-RELATED SPASTICITY IN GERMANY - RESULTS OF MOVE 1 STUDY

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OBJECTIVES: To describe treatment patterns and resource consumption in patients with MS-related spasticity in Germany. **METHODS:** MOVE 1 (MObility ImproVEment) is a multi-centre, cross-sectional, retrospective burden-of-disease study and combines a 12-month chart documentation with a patient questioning at office-based neurologists, outpatients department at hospitals and rehabilitation centers. Data were collected on demographical and clinical characteristics, treatment patterns and resource consumption (e.g. drug treatment, physiotherapy, OTC products). Direct costs were calculated from payer's (statutory health insurance) and patient's perspective. **RESULTS:** In total, 419 patients were enrolled at 42 centers from 4-9/2011. 414 patients fulfilled selection criteria and were analyzed. Mean age was 48.6 (± 9.6) years, 64.3% were female. According to physicians 27.3% of patients had mild, 44.0% moderate and 28.7% severe spasticity. Onset of spasticity was on average 8.2 (± 5.9) years before study inclusion. At study inclusion, 55.1% of patients had ongoing antispastic drug therapy (of these 55.3% received baclofen). Percentages increased with increasing severity from 33.9% (mild) to 76.5% (severe). The majority of patients received drug mono-therapy (75.4%) or dual therapy (20.2%). Overall, 37.7% of patients had used OTC products and dietary supplements (of these 46.4% vitamins, 36.4% analgesics and 26.5% omega 3-fatty acids). Within the last 12 months, 78.8% of patients had received physiotherapy (mild: 66%; severe 86%). Mean costs per patient and year from payer perspective amounted to €908 (± 991) for physiotherapy and €244 (± 467) for drugs. Stratified by severity of spasticity, physiotherapy cost increases from €516 to €1351 and drug cost from €85 to €458. Patients spent on average €14 (± 28) for drug co-payments, €182 (± 208) for physiotherapy and €131 (± 319) for OTC products and dietary supplements per year. **CONCLUSIONS:** This study provides first real-life data on treatment patterns and resource consumption in patients with MS-related spasticity in Germany.

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ASSESSMENT OF INFORMAL CARE PROVIDED TO PATIENTS WITH MULTIPLE SCLEROSIS AND LIMITATION OF PERSONAL AUTONOMY

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OBJECTIVES: To estimate economic value of informal care provided to patients in situation of dependence with multiple sclerosis (MS). **METHODS:** Patients with MS and their caregivers were identified through EDAD survey. The number of hours of informal care provided was estimated. The method of cost replacement was used to assess the economic value of this care. Two assessment scenarios were considered using "The Elderly in Spain" report (IMSERSO, 2008): the first one considered the mean wage per hour of public service for home help of the 3 Autonomous Regions of lower value, whereas the second scenario took into account the national mean wage in order to estimate cost per hour. **RESULTS:** EDAD survey identified 368 patients with MS and some kind of disability. Average age was 64.26 years (SD: 16.82) and 73.91% were female. Average daily hours of care provided to people with MS amounted to 10.27 (95% CI: 9.46 – 11.07). On an annual basis, average informal care at home equalled 3,860 hours per MS patient. According to the assessment scenarios considered, total mean costs of informal care at home ranged between 29,604 and 49,057 € per patient and year. When only the main informal carer at home is considered, estimations yield 3,585 hours per MS patient and year, whereas valuation ranged between 27,493 and 45,559 €. **CONCLUSIONS:** Informal care of MS represents a high social burden. Dependence grade influences the need to provide personal care. According to 2008 values, value of informal care provided to people with MS is estimated at 29,604 – 49,057 € per patient and year.

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HEALTH CARE COSTS OF MULTIPLE SCLEROSIS IN GERMANY

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OBJECTIVES: Multiple sclerosis (MS) is one of the most frequent neurological diseases and is associated with elevated health care costs. This study provides further insights into these costs by differentiating between patients using different MS drugs and by analysing different cost categories. **METHODS:** The database consists of German claims data from 2006 to 2010. For the MS patients expenses of different cost categories are analysed for each type of MS medication in the year 2009. These categories cover costs for disease modifying drugs, symptomatic drug therapy, primary care and hospitalization. **RESULTS:** In 2009, the mean annual costs per patient amounted to roughly 15,000€ for disease modifying drugs and about 270€ for symptomatic drug therapy. Among the MS medications, Natalizumab caused the highest treatment costs (25,104€), followed by Interferon beta-1a and Interferon beta-1b with comparable costs (16,211€ and 16,519€) and Glatirameracetate (12,617€). Azathioprine caused the lowest annual treatment costs (450€). The expenditure for primary care (1,459€), hospital services (2,157€) and symptomatic drug therapy (334€) is high for patients using Natalizumab, a drug which is indicated for patients with highly active MS. Patients using Interferon beta-1a, Interferon beta-1b and Glatirameracetate have similar expenses in those cost categories (on average 872€ for primary care, 1409€ for hospital services and 212€ for symptomatic drugs). Patients using Azathioprine have increased costs for symptomatic drug therapy (316€) and hospital services (2,578€), while primary care expenditures are comparable to patients using other basic MS therapy (770€). **CONCLUSIONS:** The costs for specific MS medication makes up for 88% of the total annual drug costs of MS patients. The expenses for other cost categories are similar for patients treated with basic MS medication but higher for patients using escalating MS therapy. Azathioprine is associated with lower medication costs but with slightly higher expenses in the other observed cost categories.

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COST EVALUATION OF MULTIPLE SCLEROSIS AT DIFFERENT STAGES IN IRAN

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OBJECTIVES: To estimate the costs of multiple sclerosis according to severity of